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TITLE 326 AIR POLLUTION CONTROL BOARD

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## Final Rule

LSA Document #12-510(F)

## DIGEST

Amends [326 IAC 1-3-4](#) concerning the national ambient air quality standards for nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM<sub>2.5</sub>), and particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM<sub>10</sub>), and [326 IAC 1-4-1](#) to add a definition for PM<sub>2.5</sub>. Effective 30 days after filing with the Publisher.

## HISTORY

Findings and Determination of the Commissioner Pursuant to [IC 13-14-9-8](#): September 12, 2012, Indiana Register (DIN: [20120912-IR-326120510FDA](#)).

Notice of Hearing: September 12, 2012, Indiana Register (DIN: [20120912-IR-326120510PHA](#)).

Date of Hearing: November 7, 2012.

[326 IAC 1-3-4](#); [326 IAC 1-4-1](#)

SECTION 1. [326 IAC 1-3-4](#) IS AMENDED TO READ AS FOLLOWS:

[326 IAC 1-3-4](#) Ambient air quality standards

Authority: [IC 13-14-8](#); [IC 13-17-3-4](#); [IC 13-17-3-11](#)

Affected: [IC 13-15](#); [IC 13-17](#)

Sec. 4. (a) All measurements of air quality that are expressed as mass per unit volume, other than for the particulate matter (PM<sub>2.5</sub>) standards contained in subsection (b)(8) and lead (Pb) standards contained in subsection (b)(6), shall be corrected to a reference temperature of twenty-five (25) degrees Celsius and a reference pressure of seven hundred sixty (760) millimeters of mercury (one thousand thirteen and two-tenths (1,013.2) millibars), as micrograms per cubic meter (µg/m<sup>3</sup>). Measurements of PM<sub>2.5</sub>, for purposes of comparison to the standards contained in subsection (b)(8), and Pb, for purposes of comparison to the standards contained in subsection (b)(6), shall be reported based on actual ambient air volume measured at the actual ambient temperature and pressure at the monitoring site during the measurement period.

(b) Ambient air quality standards are as follows:

(1) Sulfur oxides as sulfur dioxide (SO<sub>2</sub>) requirements are as follows:

(A) For the primary one (1) hour ambient air quality standard, the maximum permissible ambient air quality level shall be seventy-five (75) parts per billion (ppb). The one (1) hour standard is attained when the three (3) year average of the annual ninety-ninth percentile of the daily maximum one (1) hour average concentration is less than or equal to seventy-five (75) ppb, as determined in accordance with 40 CFR 50, Appendix T\* ~~added at 75 FR 35595-35597, and measured in the ambient air as SO<sub>2</sub> by a reference method based on 40 CFR 50, Appendix A\*, redesignated Appendix A-2 at 75 FR 35595 or Appendix A-1\*, added at 75 FR 35593-35595, 40 CFR 50, Appendix A-1\* or 40 CFR 50, Appendix A-2\*, or an equivalent method designated in accordance with 40 CFR 53\*. as amended at 75 FR 35597-35601.~~

(B) For the secondary standard, the following value shall represent the maximum permissible ambient air quality level: one thousand three hundred (1,300) µg/m<sup>3</sup> (five-tenths (0.5) ppm) maximum three (3) hour concentration not to be exceeded more than once per year. The three (3) hour averages shall be determined from successive nonoverlapping three (3) hour blocks starting at midnight each calendar day **and shall be rounded to one (1) decimal place (fractional parts equal to or greater than five-hundredths (0.05) ppm shall be rounded up).** Sulfur oxides shall be measured in the ambient air as SO<sub>2</sub> by the reference method described in 40 CFR 50, Appendix A-1\* or 40 CFR 50, Appendix A-2\*, or by an equivalent method designated in accordance with 40 CFR 53\*. **To demonstrate attainment, the second-highest three (3) hour average must be based upon hourly data that are at least seventy-five percent (75%) complete in each calendar quarter. A three (3) hour block average shall be considered valid if:**

**(i) all three (3) hourly averages for the three (3) hour period are available; or**

**(ii) only one (1) or two (2) hourly averages are available, but the three (3) hour average would exceed the level of the standard when zeros are substituted for the missing values, subject to the**

**rounding rule of this clause.**

**In all cases, the three (3) hour block average shall be computed as the sum of the hourly averages divided by three (3).**

(C)  $\text{SO}_2$  values may be converted to ppm using the conversion factor two thousand six hundred twenty (2,620)  $\mu\text{g}/\text{m}^3 = \text{one (1) ppm}$ .

(2) Total suspended particulates (TSP) requirements are as follows:

(A) For primary standards, the following values shall represent the maximum permissible ambient air quality levels:

(i) Seventy-five (75)  $\mu\text{g}/\text{m}^3$  annual geometric mean.

(ii) Two hundred sixty (260)  $\mu\text{g}/\text{m}^3$  maximum twenty-four (24) hour average concentration not to be exceeded more than one (1) day per year.

(B) For secondary standards, the following value shall represent maximum permissible ambient air quality levels: one hundred fifty (150)  $\mu\text{g}/\text{m}^3$  maximum twenty-four (24) hour average concentration not to be exceeded more than one (1) day per year.

(3) Carbon monoxide (CO) requirements are as follows:

(A) For primary and secondary standards, the following values shall represent the maximum permissible ambient air quality levels:

(i) Ten (10) milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) (ten thousand (10,000)  $\mu\text{g}/\text{m}^3$ ) (nine (9) ppm) maximum eight (8) hour average concentration not to be exceeded more than once per year.

(ii) Forty (40)  $\text{mg}/\text{m}^3$  (forty thousand (40,000)  $\mu\text{g}/\text{m}^3$ ) (thirty-five (35) ppm) maximum one (1) hour average concentration not to be exceeded more than once per year.

(B) CO values may be converted to ppm using the conversion factor one thousand one hundred forty-five (1,145)  $\mu\text{g}/\text{m}^3 = \text{one (1) ppm}$ .

(4) Ozone ( $\text{O}_3$ ) requirements are as follows:

(A) For the one (1) hour ozone standards, the level of the one (1) hour primary and secondary ambient air quality standards for ozone measured by a reference method based on 40 CFR 50, Appendix D\* and designated in accordance with 40 CFR 53\* is twelve-hundredths (0.12) ppm (two hundred thirty-five (235)  $\mu\text{g}/\text{m}^3$ ). The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above twelve-hundredths (0.12) ppm (two hundred thirty-five (235)  $\mu\text{g}/\text{m}^3$ ) is equal to or less than one (1) as determined by 40 CFR 50, Appendix H\*.

(B) For the eight (8) hour ozone standards, the:

(i) level of the eight (8) hour primary and secondary ambient air quality standards for ozone, measured by a reference method based on 40 CFR 50, Appendix D\* and designated in accordance with 40 CFR 53\*, is eight-hundredths (0.08) ppm, daily maximum eight (8) hour average; and

(ii) eight (8) hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth highest daily maximum eight (8) hour average ozone concentration is less than or equal to eight-hundredths (0.08) ppm as determined in accordance with 40 CFR 50, Appendix I\*.

(C)  $\text{O}_3$  values may be converted to ppm using the conversion factor one thousand nine hundred sixty-five (1,965)  $\mu\text{g}/\text{m}^3 = 1.0 \text{ ppm}$ .

(5) Nitrogen dioxide ( $\text{NO}_2$ ) requirements are as follows:

(A) For the primary one (1) hour ambient air quality standard, the maximum permissible ambient air quality level shall be one hundred (100) ppb, one (1) hour average concentration, measured in the ambient air as  $\text{NO}_2$ . The one (1) hour standard is attained when the three (3) year average of the annual ninety-eighth percentile of the daily maximum one (1) hour average concentration is less than or equal to one hundred (100) ppb, as determined in accordance with 40 CFR 50, Appendix S\*. ~~added at 75 FR 6532-6534.~~

(B) For the ~~annual primary and secondary standards, standard,~~ the following value shall represent the maximum permissible ambient air quality level: one hundred (100)  $\mu\text{g}/\text{m}^3$  (fifty-three thousandths (0.053) ppm) annual ~~arithmetic mean~~ **average** concentration in a calendar year. **The annual primary standard is attained when the annual average concentration in a calendar year is less than or equal to fifty-three (53) ppb, as determined in accordance with 40 CFR 50, Appendix S\* for the annual standard.**

(C) **For the annual secondary standard, the following value shall represent the maximum permissible ambient air quality level: one hundred (100)  $\mu\text{g}/\text{m}^3$  (fifty-three thousandths (0.053) ppm) annual arithmetic mean concentration in a calendar year. The secondary standard is attained when the annual arithmetic mean concentration in a calendar year is less than or equal to fifty-three thousandths (0.053) ppm, rounded to three (3) decimal places (fractional parts equal to or greater than five ten-thousandths (0.0005) ppm must be rounded up). To demonstrate attainment, an annual mean must be based upon hourly data that are at least seventy-five percent (75%) complete or upon data derived from manual methods that are at least seventy-five percent (75%) complete for the scheduled sampling days in each calendar quarter.**

~~(D)~~ (D)  $\text{NO}_2$  values may be converted to ppm using the conversion factor one thousand eight hundred eighty

(1,880)  $\mu\text{g}/\text{m}^3$  = one (1) ppm.

**(E) The levels of the standards shall be measured by:**

**(i) a reference based on 40 CFR 50, Appendix F\*; or**

**(ii) an equivalent method designated in accordance with 40 CFR 53\*.**

(6) Pb: For primary and secondary standards, the following value shall represent the maximum permissible ambient air quality level: fifteen-hundredths (0.15)  $\mu\text{g}/\text{m}^3$ , arithmetic mean concentration over a three (3) month period. The standards are attained when the maximum arithmetic three (3) month mean concentration for a three (3) year period is less than or equal to fifteenth-hundredths (0.15)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix R\* and measured in the ambient air as Pb by either:

(A) a reference method based on 40 CFR 50, Appendix G\*, and designated in accordance with 40 CFR 53\*; or

(B) an equivalent method designated in accordance with 40 CFR 53\*.

(7)  $\text{PM}_{10}$ : For primary and secondary standards, the following values shall represent the maximum permissible ambient air quality levels: **level is**

~~(A) Fifty (50)  $\mu\text{g}/\text{m}^3$  annual arithmetic mean. The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 CFR 50, Appendix K\*, is less than or equal to fifty (50)  $\mu\text{g}/\text{m}^3$ .~~

~~(B) one hundred fifty (150)  $\mu\text{g}/\text{m}^3$  maximum twenty-four (24) hour average concentration. The standards are attained when the expected number of days per calendar year with a twenty-four (24) hour average concentration above one hundred fifty (150)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix K\*, is equal to or less than one (1).~~

(8)  $\text{PM}_{2.5}$ : For primary and secondary standards, the following values shall represent the maximum permissible ambient air quality levels:

(A) Fifteen (15) micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) annual arithmetic mean concentration. The standards are attained when the annual arithmetic mean concentration is less than or equal to fifteen (15)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix N\* and measured in the ambient air as  $\text{PM}_{2.5}$  by either:

(i) a reference method based on 40 CFR 50, Appendix L\*, and designated in accordance with 40 CFR 53\*; or

(ii) an equivalent method designated in accordance with 40 CFR 53\*.

~~(B) Sixty-five (65)  $\mu\text{g}/\text{m}^3$  twenty-four (24) hour average concentration. The standards are attained when the ninety-eighth percentile twenty-four (24) hour concentration is less than or equal to sixty-five (65)  $\mu\text{g}/\text{m}^3$ , as determined in accordance with 40 CFR 50, Appendix N\* and measured in the ambient air as  $\text{PM}_{2.5}$  by either:~~

~~(i) a reference method based on 40 CFR 50, Appendix L\*, and designated in accordance of 40 CFR 53\*; or~~  
~~(ii) an equivalent method designated in accordance with 40 CFR 53\*.~~

\*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204.

*(Air Pollution Control Board; [326 IAC 1-3-4](#); filed Mar 10, 1988, 1:20 p.m.: 11 IR 2378; filed Apr 13, 1988, 3:35 p.m.: 11 IR 3020; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; filed May 21, 2002, 10:20 a.m.: 25 IR 3055; filed Mar 9, 2004, 3:45 p.m.: 27 IR 2224; filed Dec 20, 2004, 2:15 p.m.: 28 IR 1471; filed Mar 6, 2006, 3:00 p.m.: 29 IR 2179; filed Sep 24, 2010, 1:44 p.m.: [20101020-IR-326100127FRA](#); filed Feb 9, 2011, 10:29 a.m.: [20110309-IR-326100495FRA](#); filed Dec 19, 2012, 4:22 p.m.: [20130116-IR-326120510FRA](#))*

SECTION 2. [326 IAC 1-4-1](#) IS AMENDED TO READ AS FOLLOWS:

#### Rule 4. Attainment Status Designations

##### [326 IAC 1-4-1](#) Definitions

Authority: [IC 13-14-8](#); [IC 13-17-3-4](#); [IC 13-17-3-11](#)

Affected: [IC 13-15](#); [IC 13-17](#)

Sec. 1. The following definitions apply throughout this rule:

- (1) "SO<sub>2</sub>" means sulfur dioxide.
- (2) "CO" means carbon monoxide.
- (3) "O<sub>3</sub>" means ozone.
- (4) "PM<sub>10</sub>" has the meaning set forth in [326 IAC 1-2-52.4](#).
- (5) "NO<sub>x</sub>" means nitrogen ~~dioxides~~ **dioxide**.
- (6) "Pb" means lead.
- (7) "PM<sub>2.5</sub>" has the meaning set forth in [326 IAC 1-2-52.2](#).**

(Air Pollution Control Board; [326 IAC 1-4-1](#); filed Mar 10, 1988, 1:20 p.m.: 11 IR 2379; filed Aug 9, 1991, 11:00 a.m.: 14 IR 2218; filed Dec 30, 1992, 9:00 a.m.: 16 IR 1382; filed Apr 18, 1995, 3:00 p.m.: 18 IR 2220; filed Oct 22, 1997, 8:45 a.m.: 21 IR 932; filed Apr 17, 1998, 9:00 a.m.: 21 IR 3342; filed Apr 29, 1998, 3:15 p.m.: 21 IR 3341; filed May 21, 2002, 10:20 a.m.: 25 IR 3056; filed Nov 15, 2002, 11:17 a.m.: 26 IR 1077; filed Dec 1, 2003, 10:00 a.m.: 27 IR 1167; filed Nov 12, 2004, 12:15 p.m.: 28 IR 1182; filed Sep 26, 2006, 10:03 a.m.: [20061025-IR-326060018FRA](#); filed Sep 13, 2007, 1:57 p.m.: [20071010-IR-326070024FRA](#); filed Dec 26, 2007, 1:43 p.m.: [20080123-IR-326070308FRA](#); filed Dec 19, 2012, 4:22 p.m.: [20130116-IR-326120510FRA](#))

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Findings and Determination of the Commissioner Pursuant to [IC 13-14-9-8](#): [20120912-IR-326120510FDA](#)

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